

Claims

- [c1] What is claimed is:
1. A scribe line structure, comprising:
a substrate;
a plurality of dielectric layers formed on the surface of the substrate comprising at least a process monitor pattern set in a scribe line region; and
a dummy metal structure formed on the surface of the substrate connecting with the process monitor pattern and exposed in the scribe line region.
 - [c2] 2. The scribe line structure of claim 1 wherein the plurality of dielectric layers comprise dielectric layers having a dielectric constant less than or equal to 3.
 - [c3] 3. The scribe line structure of claim 1 wherein the dummy metal structure comprises a plurality of dummy vias.
 - [c4] 4. The scribe line structure of claim 1 wherein the dummy metal structure comprises a plurality of dummy metal layers.
 - [c5] 5. The scribe line structure of claim 1 wherein the process monitor pattern is made of metal materials.

- [c6] 6. The scribe line structure of claim 1 wherein the process monitor pattern comprises test keys, feature dimension measuring elements, or alignment marks.
- [c7] 7. The scribe line structure of claim 1 wherein the surface of the substrate further comprises a protective layer covering two sides of the surface of dielectric within the scribe line region.
- [c8] 8. A scribe line structure, comprising:
a substrate, the surface of the substrate comprising at least a scribe line region;
a plurality of dielectric layers formed on the surface of the substrate comprising at least a process monitor pattern set in the scribe line region; and
a heat irradiative structure formed in the plurality of dielectric layers connecting the plurality of dielectric layers with the surface of the substrate and exposed in the scribe line region.
- [c9] 9. The scribe line structure of claim 8 wherein the plurality of dielectric layers comprise dielectric layers having a dielectric constant less than or equal to 3.
10. The scribe line structure of claim 8 wherein the heat irradiative structure is a dummy metal structure.
- [c10] 11. The scribe line structure of claim 10 wherein the

dummy metal structure comprises a plurality of dummy vias.

[c11] 12. The scribe line structure of claim 10 wherein the dummy metal structure comprises a plurality of dummy metal layers.

[c12] 13. The scribe line structure of claim 8 wherein the heat irradiative structure connects with the process monitor pattern.

[c13] 14. The scribe line structure of claim 8 wherein the process monitor pattern is made of metal materials.

[c14] 15. The scribe line structure of claim 8 wherein the process monitor pattern comprises test keys, feature dimension measuring elements, or alignment marks.

[c15] 16. The scribe line structure of claim 8 wherein the surface of the substrate further comprises a protective layer covering two sides of the surface of dielectric surface within the scribe line region.